Critical Evaluation Of Simulation Studies In Maintenance Systems

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Summary

The purpose of this paper is to examine how far simulation studies of maintenance systems are neglecting simulation-related statistical issues. This negligence may leave simulation results suspicious and hard to explain. Several simulation factors are used to identify the strength of executed simulation experiments and to evaluate the level of clarity and reliability of the simulation models. The factors includes purpose of simulation, simulation model, model assumptions, distribution and random variables, simulation languages and computers, program verification and model validation, design of experiment, and analysis of the output. For this purpose, the literature is reviewed and subjected to the evaluation. It is observed that most papers define clearly their objectives, simulation languages, and model performance measures. However, verification, validation, experimental design, and output analysis are the most unclear factors.

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